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## WATER RATES IN SMALL CITIES AND VILLAGES<sup>1</sup>

BY JOHN WILSON<sup>2</sup>

According to the latest information the author has at hand, there are 202 water works plants in the State of Minnesota, of which 195 are publically and 7 privately owned. In view of the foregoing, the Minnesota Section of the American Water Works Association will be interested in water rates which apply particularly to municipally owned plants.

A municipality when operating a water works system is engaging in a commercial enterprise, and to be successful, it must furnish adequate service at reasonable rates, which must be in proportion to the service rendered and without discrimination.

The service rendered by a water works plant is of two distinct types; first, it must be ready to furnish water in comparatively large quantities under high pressure for short periods of time for the purpose of extinguishing fires; and second, it must furnish ample quantities of suitable water for domestic purposes under moderate pressure at all times.

It is now generally conceded that all the expense incident to the former should be borne by the village or city at large. It is possibly unfortunate that the method of arriving at the compensation for fire service has generally taken the form of hydrant rental, as the number of fire hydrants has but a remote relation to the value or cost of the service. It has been estimated that 60 to 80 per cent of the cost of water works plants in cities under 5000 is incurred by providing reasonable fire protection.

Two years ago the author was called on to report on the matter of rates for the village of Crosby, Minnesota, which problem involved some unusual and interesting features. Crosby has a population of approximately 3500, and owes its existence largely to iron mining industries in the immediate vicinity. The water works plant was

<sup>1</sup> Read before the Minnesota Section, November 6, 1920. Discussion is invited and should be sent to the Editor.

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installed in 1911 by a private company and operated by it until two years ago, when the works were taken over by the village.

The franchise under which the company operated provided, in case the village wished to acquire title to the plant, that a board of appraisers should be appointed to determine the value and price to be paid. In accordance with this provision, C. T. Harding, of Virginia, was selected by the company, the author was appointed by the village and John W. Alvord, a past president of the American Water Works Association, was selected as the third member.

The value of the plant, as fixed by the board, was \$75,680. The plant at that time consisted of 12 ground water wells 70 to 80 feet deep, electrically driven centrifugal pumps, a 100,000-gallon elevated tank, about 6 miles of distributing mains 4 to 10 inches in diameter, and 34 fire hydrants.

The conditions which led up to the village taking over the plant were largely due to the failing of private wells, due to mining operations, and many of the outlying districts were entirely deprived of water. The company in the meantime was naturally very reluctant to make extensions. Immediately upon taking over the plant the village spent over \$56,000 in extending the distributing mains and also installed 35 additional fire hydrants.

The first step in determining what would be a fair schedule of rates was to estimate the proportion of the cost of the plant chargeable to fire protection. It was accordingly estimated that 51.6 per cent of the appraised value and 45.9 per cent of the cost of extensions might justly be charged to fire protection and the remainder charged to commercial service.

The village had 356 consumers and 155 householders who had asked for connections as soon as the extensions could be completed. The question naturally came up as to who should install the meters and lay the connection from the main to the curb box.

In connection with this, the author suggested that the village assume the cost of these two items, inasmuch as the number of consumers was small compared with the amount of distributing main; that many of the householders were men of limited means who would be tempted to carry water rather than connect with the mains were they required to bear all the expense; and, furthermore, one of the principal needs of the water department was paying consumers. It was also suggested that, in consideration of the village bearing this expense, all consumers should pay a service charge sufficient to cover the interest on the necessary investment and depreciation.

In support of these suggestions, he quoted the following authorities.

In the case of Samuel M. Gillmore vs. Hackensack Water Company, the New Jersey Public Utility Commission ruled as follows:

The Board concludes that the Hackensack Water Company should take upon itself the burden of maintaining all such connections as lie within the public streets up to and including the stop cock. The practice of the company, requiring the consumer to pay for the installation of service pipe within the public streets and the stop cock, is disapproved as an improper and unreasonable charge. (December 7, 1915.)

A similar ruling by the Wisconsin Railroad Commission was as follows:

The question as to who should own meters appears to be settled. The only point to be decided here is whether or not services are a part of the facilities which the utility is expected to furnish. The logical conclusion seems to be that the utility should install and own services to the curb line. The utility, and not the consumer has the right to occupy the streets, and all pipes laid in the streets should be the property of the utility, and we believe should be put in by the utility. The business of the utility is to deliver its product to the premises of the consumer. If the utility should own the mains through which water is carried to various sections of the city, it seems equally true that it should own all parts of the distribution system as far as the consumer's premises. The service pipe from main to curb is as much a part of the utility's distribution system as is the main itself. Both parts of the equipment have the same purposes—the delivery of water to the consumer's premises.

The California Railway Commission has reached the same conclusion (2 Cal. R. C. R., 989), stating it as follows:

That it is the duty of a water company to supply service connections up to the property line, and meters, where meters are used, without direct expense to the consumer, seems clear both on principle and on authority. Such requirement seems entirely reasonable. The service pipe up to the property line and the meters, where used, are as necessary in the performance of the water company's duty to the public as its reservoirs, wells or mains. The consumer has no right to dig up the streets to lay a service pipe. That right belongs to the water company alone. It seems unreasonable to ask that the consumer should pay for service pipes and meters which are a part of the water company's system, which the consumer has no legal right to install and which are under the complete control of the water company.

The service rates suggested, which would be a regular monthly charge, in addition to regular meter rates, were as follows:

METER	RATE	METER	RATE	METER	RATE
$\frac{5}{8}$ -in.	\$0.40	1 $\frac{1}{4}$ -in.	\$1.80	2 $\frac{1}{2}$ -in.	\$6.00
$\frac{3}{4}$ -in.	0.75	1 $\frac{1}{2}$ -in.	2.50	3 -in.	8.00
1 -in.	1.25	2 -in.	4.00	4 -in.	12.00

One advantage of a service charge is that it tends to regulate the department's income and thus aid in meeting current expenses, while graduating the charge according to the size of meter and connection protects the department against consumers demanding much larger fixtures than necessary.

As closely as could be ascertained, the yearly consumption of water would be distributed as follows:

	<i>cubic feet</i>
Measured by $\frac{5}{8}$ -inch meters . . . . .	1,440,000
Measured by larger meters . . . . .	188,520
Passing meter without registry . . . . .	50,000
Street sprinkling . . . . .	290,000
Drinking fountains . . . . .	180,000
Flushing sewers, etc . . . . .	30,000
Flushing trenches . . . . .	10,000
Testing meters . . . . .	600
Use in extinguishing fires . . . . .	32,400
Total . . . . .	2,221,520

It is very clear that the first three items should be paid for by the water consumer; the last one charged to fire protection; and the remainder should be charged to the village at large.

Unfortunately no means had been provided at the plant to determine the amount of water pumped. It was therefore assumed that the above would constitute about 60 per cent of the water actually pumped and that 40 per cent would be unaccounted for.

The total annual expenses for everything connected with the department was about as follows:

Interest on bonds \$130,000 at 6 per cent . . . . .	\$7,800.00
Interest on other indebtedness \$15,000 at 6 per cent . . . . .	900.00
Clerk's salary, charge to Water Department . . . . .	960.00
Superintendent's salary . . . . .	1,800.00
Labor . . . . .	600.00
Office supplies, postage, etc . . . . .	500.00
Fuel . . . . .	30.00
Meter repairs . . . . .	100.00

Maintenance, supplies and depreciation.....	1,500.00
Electric current.....	612.50
Insurance.....	30.00
Telephone.....	25.00
Total.....	<u>\$14,857.50</u>

It will be remembered that the extensions made to the distributing system were made necessary because of private wells becoming exhausted due to mining operations. The total number of houses to be served by these extensions was 331, while the number who declared their intention of taking water was but 155.

It is at once apparent that a rate for water which would yield a fair return on an investment such as incurred by these extensions would be unreasonable, and at the same time it would not be just or fair to place this additional expense on such consumers as the village already had.

The village was under moral obligations, at least, to contribute something to the relief of parties who had been deprived of well water. They were also engaging in a commercial enterprise, and should expect, the same as in any other business, to do so for a time at a financial loss.

It was therefore estimated a reasonable deficit over a fair return on these extensions would be \$1700 per year, which should be included in the proportion of the expense borne by the village at large.

From the foregoing data the rates which should be put into effect and the income to the water department would be as follows:

Hydrant rental, 79 hydrants at \$75.00.....	\$5,925.00
Deficiency on fair return on extension.....	1,700.00
Water used by village at 18 cents per 100 cubic feet.....	1,000.00
Total due from village.....	<u>\$8,625.00</u>
Service charge.	
400— $\frac{5}{8}$ -inch meters at 40 cents per month.....	\$1,920.00
2—1 $\frac{1}{4}$ -inch meters at \$1.80 per month.....	43.20
1—1 $\frac{1}{2}$ -inch meter at 2.50 per month.....	30.00
1—2 $\frac{1}{2}$ -inch meter at 6.00 per month.....	72.00
1—3 -inch meter at 8.00 per month.....	96.00
Total from service charge.....	<u>\$2,161.20</u>
1,628,520 cubic feet of water at 25 cents per 100 cubic feet	\$ 4,071.30
Making a total income from private consumers of.....	\$ 6,232.50
And a total income from all sources of.....	<u>\$14,857.50</u>

In this way the village would pay 58 per cent of the total annual expense and the water consumers 42 per cent.

The Wisconsin Commission ruled, in the case of Ashland, Wisconsin, that the city should pay 54.5 per cent of all fixed charges; and in the case of Ripon, Wisconsin, that the city should pay 75 per cent of all fixed charges; in which case it would seem that the distribution at Crosby would not be unreasonable.

Such items as clerk's salary were all charged to domestic service, while the fire service was charged with its share of interest on bonds, maintenance of fire hydrants, etc.

The case of Crosby will illustrate fairly well some of the principles of arriving at proper rates in a given case. It is now in order to consider briefly the rates now in effect, throughout the state. The following figures are necessarily not exact, but they are taken from about 140 towns and are therefore reasonably representative.

Fifty-seven per cent of the water plants in the state receive nothing whatever from the municipality in the way of hydrant rental or payment for fire protection. Where hydrant rental is paid, it ranges all the way from \$4 per year per hydrant to \$140, the average being about \$35.

Seventy-eight per cent of the towns pay nothing for water used for public purposes, such as street sprinkling, while of those who do pay, 69 per cent do so on a flat rate basis, without regard to the amount of water used.

In commercial service, about 44 per cent are on a strict meter basis, 36 per cent on a combined meter and flat rate basis, and 20 per cent are on a flat rate.

The rates in most cases are on a sliding scale, decreasing as the amount of water used increases. The most extreme case is a town of a little over 3000, where they have 21 different rates for water and 20 different rates of discount for payment of bills when they become due.

In most cases the revenue derived from commercial service is not sufficient to cover the department's needs, and certificates of indebtedness are issued. These certificates bear 6 per cent interest and in many cases can only be disposed of upon a discount of about 10 per cent. Paper of this kind is allowed to accumulate until a special levy in taxation is made or bonds issued for paying off the indebtedness. The whole procedure is an expensive and extravagant way of doing business. In consideration of the present state of the

money market, many towns would do well to revise their water rates and place their departments on a cash basis.

A full legal discussion relative to who should bear the cost of installing service mains and as to the ownership of such mains when installed would of itself necessitate a very long paper. The following discussion applies more particularly to villages and municipally owned plants.

As to whether the consumer or the municipality should bear the cost of installing the service mains, the Minnesota laws very clearly leave this to the discretion of the governing body, which may require the consumer to pay part or all of the expense, or, on the other hand, may install the service entirely free of charge as it may deem advisable.

The State Attorney General's office has handed down an opinion that it is customary in Minnesota to consider the service pipe from the main to the shut-off box a part of the main.

Section 1313 of the 1913 Statutes reads as follows:

The village council of any village now or hereafter having a water works system shall have power to levy a special tax upon all property especially benefited thereby, in front of which any water main shall be laid.

Section 1314 reads:

The same may be divided up into five annual installments and shall not exceed the sum of one dollar per lineal foot of pipe laid in front of each lot or parcel of land, against each tract of land, and the same shall be a lien upon such land from the time that the tax is levied by the village council as hereafter provided, provided, however, that no lot or parcel of land shall be subject to such tax after five annual assessments have been levied, except as hereinafter provided.

Section 1326, Supplement 1917, a very lengthy section, reads in part as follows:

It shall be the duty of every owner or occupant of any abutting property platted into lots and blocks having dwelling house or business property situated thereon to install a toilet in said dwelling or business property, and make connection thereof with the water and sewer in the street or alley adjacent thereto, . . . .

The section then provides that in case of refusal, the village may install such connection and assess the entire cost to the property, and that the payment of such assessment may be made in three annual installments.



It is thus very evident from the statutes themselves that the main and the service main are considered as two distinct features of the system, the assessment for the first being limited and spread over a term of five years, while the assessment for the latter is limited only by the cost and must be paid in three years.

However, the Attorney-general's office may not be so far wrong after all, for when we come to the ownership of the service main, or vested title therein, it seems a settled question that the village or utility has title to both notwithstanding the fact that the consumer may have paid in full the cost of installing the service, and is in this way considered an essential part of the main.

John W. Alvord, in a paper read before the second annual convention of the New Jersey Utilities Association, cites the case of the Knoxville Water Company wherein in valuing the property for a rate case, the company presented to the court the claim that all services were the property of the company, whether provided at the company's expense or at the expense of the private consumer. On this point the Master's opinion was as follows:

In the matter of services, there is much difficulty, not as to price, for the proof seems to be with complainant (water company). Defendant's plumber witnesses when under cross-examination rather confirm it. Defendant says, and proof shows, that consumers were made to pay for all but 423 of the 4,323 services stated. . . . Complainant says it actually owned these connections, . . . they are in the streets and cannot be changed by the consumer. In case of competition, this consumer would not be permitted to connect his with another main. . . . The contention is that no matter how obtained, the property is theirs and the charge heretofore made was an additional charge for water at that time, etc.

I see no way of resisting this conclusion, although I confess to much sympathy with defendant's contention that the citizens having paid for it should not be charged an interest on its value.

The master then allowed the sum of \$38,714.00 for the service pipes.

The U. S. Supreme Court in passing upon this case examined the allowances of the master in detail, making no deductions from the master's findings on the value of services. The Supreme Court refers to the service pipes in the following language:

"The first fact essential to the conclusions of the court below is the valuation of the property devoted to the public use, upon which the company is entitled to earn a return. That valuation (\$608,000) must now be considered. It was made up by adding to the appraisement, in minute detail, all of the tangible property. the sum of \$10,000 for organization, promoting, etc., and \$60,000 for going concern. . . . The cost of reproduction is not always a fair measure of the present value of a plant which has been in use for many years. The items composing the plant depreciate in value from year to year

in a varying degree. Some pieces of property, like real estate, for instance, depreciate not at all, and sometimes, on the other hand, appreciate in value. But the reservoirs, the mains, the *service pipes*, structures upon real estate, standpipes, pumps, boilers, meters, tools and appliances of every kind begin to depreciate with more or less rapidity from the moment of their first use."

It will thus be seen that the master included the service pipes in his valuation on the theory that title was in the company, although paid for by the consumer, without any allowance in the reproduction cost for the contribution, and that the United States Supreme Court, by inference at least, affirmed his report as to the service pipes being the property of the water company.

Mr. Alvord also referred to a case presented to the United States Supreme Court in the Washington Gas case (Washington Gas Company's, District of Columbia, 161 vs. 316, 326). Here the company wish to disclaim all title to the service pipe on the grounds that it had been paid for by the consumer, and thus avoid liability because of a defective service box. Mr. Justice White, speaking for the court, said:

The plain object contemplated by the formation of the gas company was the supplying of gas to be by it manufactured to consumers, and it is obvious that this could not be done without making a connection between the street mains and abutting dwellings. When such connections are made with the mains they receive from them and convey into dwellings highly inflammable material, which flows by an uninterrupted channel from the mains themselves. It must therefore necessarily have been contemplated that such connections with the mains as were from their very nature incidental to an inseparable connection with the consumption of gas should be a part of the apparatus of the gas company, and be under its control, rather than under that of the city or the property owner.

Indeed the control by the gas company of the connection from its mains to the point of use is as absolutely necessary to make it possible for the company to carry out the very purpose of its charter as are the retorts and mains.

Moreover, the provisions of the charter show that it was thereby contemplated that the connection between company's mains and the places where the gas was to be consumed should be made by the gas company, and become a part of its apparatus.

The charter does not confer the power upon those desiring a supply of gas, but gives such power to the company. . . .

We conclude, therefore, that the duty was imposed upon the gas company to supervise and keep the gas box in repair. This duty not only did not conflict with the charter of the company, but, on the contrary, is sanctioned by its tenor and is imposed as an inevitable accessory of the powers which the charter confers.

Nor do we think that this duty was affected by the circumstances that the cost of the labor and materials used in the construction of the connection and gas box was paid by an occupant or owner of property, who desired to be fur-

nished with gas. As the service pipe and stop cock was a part of the apparatus of the company and was used for the purpose of its business, it is entirely immaterial who paid the cost or might in law on the cessation of the use of the service pipe and gas box by the company be regarded as the owner of the mere materials.

Certainly, it would not be claimed that if the box and its connection became so defective or out of repair that gas escaped therefrom and caused injury the company could legally assert that it was under no obligation to take care of the apparatus because of the circumstance that it had been compensated by others for its outlay in the construction of the receptacles from which the gas escaped.

The argument seeking to distinguish between the service pipe and other appliances of the gas company and the gas box so as to make the company liable for one end and not for the other is without merit. All these appliances were parts of the one structure put in position and used together for the purposes of the company.

The conclusions reached after investigating all available court decisions are that the consumer in paying all the costs incident to installing service mains does not acquire ownership, but is simply making a contribution, paying in advance for anticipated services or paying in part for the enhanced value of his property because of such installation.

By assuming the burden of installing service mains, the consumer supplies a portion of the necessary capital, and is entitled to consideration to that extent in the rates charged for water service.

The Minnesota law in leaving the question as to who shall furnish the capital for installing service mains, the consumer or the village, to the discretion of the governing body, seems entirely proper, for in this way the work can be financed by the party who can do so most advantageously.